

REMARKS

Claims 1 and 33-37 were examined. No claims are amended. Claims 1 and 33-37 remain in the Application.

The Patent Office rejects claims 1 and 33-37 under 35 U.S.C. §103(a). Reconsideration of the rejected claims is respectfully requested in view of the above amendments and the following remarks.

The Patent Office rejects claims 1 and 33-35 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 3,674,049 of Macgregor (Macgregor) in view of U.S. Patent No. 5,561,979 of Coutant et al. (Coutant) and U.S. Patent No. 6,241,462 of Wannasuphophrasit et al. (Wannasuphophrasit).

Macgregor is cited for disclosing a refueling system comprising a hose reel, a drogue, a hose reel drive system comprising a fixed displacement hydraulic motor, a microprocessor, and a tachometer. Macgregor uses two mechanisms working in parallel to retract and extend a hose reel: (1) a spring motor; and (2) a fixed displacement pump.

Coutant is cited for disclosing a variable displacement hydraulic motor. Coutant actually discloses a hydrostatic system using a variable displacement pump coupled to a motor through a shaft. Wannasuphophrasit is cited for disclosing the use of a reel torque sensor on a suspended cable.

Claims 1 and 33-35 describe a hose reel drive system including, among other things, "a variable displacement hydraulic motor having a control piston that controls displacement of the motor and is controlled by a pressure change in an electro-hydraulic control valve." The Patent Office says that Coutant describes a system having a variable displacement motor with a control piston (130) that controls displacement of the motor, citing col. 4, last paragraph of Coutant. The Patent Office admits that Macgregor and Coutant fail to teach an electro-hydraulic control valve but believes it would be obvious given the knowledge in the art to use one.

Col. 4, last paragraph of Coutant says that pressurized fluid in conduit 124 acts on slug 134 to create a force that is operative in conjunction with spring 132 to bias piston 130 towards

its maximum displacement. In other words, pressurized fluid acting on the top of piston is used to maintain the motor in Coutant in its maximum displacement when the displacement of the variable displacement pump is being varied between its minimum and maximum (by pushing the piston downward). To change the displacement, pressurized fluid is introduced at the bottom of the piston to push the piston upward. The introduction of pressurized fluid at the top and bottom of the piston is controlled by solenoid valves. This is explained in the last paragraph of column 8 and also in more detail in the last paragraph of column 9. Thus, Coutant does not teach a pressure change in a valve, but instead actuates two valves to control a pressure change in the piston. The need for such a control system undoubtedly flows from the presence of a pump and a motor in the system of Coutant.

In essence, the Patent Office finds that Coutant teaches a variable displacement motor and if that is substituted for the fixed displacement motor in Macgregor, the rest of pending claims 1 and 33-35 are obvious. However, even assuming the variable displacement motor of Coutant can be substituted for the fixed displacement motor of Macgregor, since Macgregor also teaches a pump and a motor, at best the combined teachings of Coutant and Macgregor would be to use Coutant's system of controlling both. To arrive at the teachings of claims 1 and 33-35 of the pending Application, would require a complete re-working of the teachings of Coutant, eliminating the two valves that control a pump and a motor and replace the valves with an electro-hydraulic control valve and then control a displacement of the motor by a pressure change not in the piston of Coutant, but in the electro-hydraulic control valve. The Patent Office has given no apparent reason for such re-working of Macgregor and Coutant beyond the conclusory statement that electro-hydraulic control valves are more "reliable" and offer "a further refined control system in comparison to a mechanical servo mechanism." The Patent Office does not say what the electro-hydraulic control valve is more reliable than or give any basis for its replacement of a prior mechanical servo mechanism. If the Patent Office is talking about such a mechanism in Coutant, in its previous response, Applicant cited the abstract of Coutant that stated that its system "provides an accurate control of the displacement pump without the need of providing complicated follow-up mechanisms and/or servo mechanisms."

In view of the above, Applicant believes claims 1 and 33-35 are not obvious over Macgregor, Coutant and the general knowledge in the art. The teachings of Wannasuphprasit

do not cure the defects noted above. Applicant respectfully requests that the Patent Office withdraw the rejection of claims 1 and 33-35 under 35 U.S.C. § 103(a).

With regard to the rejection of claims 36 and 37, claim 36 describes a system where the variable displacement hydraulic motor is configured to act as a pump to rotate the reel in one direction and as a motor to rotate the reel in an opposite direction. Claim 37 describes a system where the microprocessor contains instructions to direct the motor to provide driving torque to rotate the reel in a first direction and resistance torque to rotate the reel in a different second direction.

Claims 36 and 37 are similar to claims 1 and 33-35 in the sense that the hose reel drive system includes a variable displacement motor having an electro-hydraulic control valve. Therefore, the arguments presented above with respect to Macgregor, Coutant, general knowledge and Wannasuphoprasit may be used to distinguish claims 36 and 37 from the cited art. Further, with respect to claim 36, the Patent Office cites U.S. Patent No. 3,894,553 of Exley that says a motor can act as both a pump and a motor. The Patent Office gives no indication how such a motor would be incorporated into the system of Macgregor and Coutant. Similarly, the statement that microprocessors can be programmed to perform any function to reject claim 37 gives no indication how a programmed microprocessor would be incorporated into the system of Macgregor and Coutant.

Applicant respectfully requests that the Patent Office withdraw the rejection of claims 36-37 under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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